

【ABSTRACT】

A hybrid power supply system including piezoelectric and ferrite transformers for driving a discharge lamp is provided. Specifically, the hybrid power supply system includes a rectifier/filter, a piezoelectric inverter, and a ferrite converter. The rectifier/filter has an input terminal connected to an external AC voltage to convert the external AC voltage to a DC voltage. The piezoelectric inverter is connected to the rectifier/filter to step up and convert the DC voltage to an AC voltage for driving the discharge lamp. The ferrite transformer is connected to the rectifier/filter to step down the DC voltage to a rated DC voltage for driving discharge lamp circuits other than the discharge lamp. The piezoelectric inverter and the ferrite converter are integrated by connecting a primary side of the piezoelectric step-up transformer and a primary side of the ferrite step-down transformer in series or in parallel with an output terminal of switching circuits.